The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte FREDERICK D. BUSCHE
and DAVID MARCOTTE

Appeal No. 2005-1644
Application 09/400,583[1]

ON BRIEF

Before KRASS, BARRETT, and SAADAT, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the final rejection of claims 39, 41-44, 53, and 55-58.

We affirm and enter a new ground of rejection.

[1] Application for patent filed September 22, 1999, entitled "Method and System for Integrating Spatial Analysis and Data Mining Analysis to Ascertain Favorable Positioning of Products in a Retail Environment."

BACKGROUND

The invention relates to determining relationships of data associated with product placement in a retail space. As disclosed, the location of products within a store are known, e.g., using a GPS system. The path of the customer through the store is traced, e.g., using a shopping basket with a GPS receiver that records its movements throughout the store where the path is retrieved at checkout. The identity of the customer is known, e.g., using a preferred customer card, a credit card, or using some other kind of identification. Data on the path of the customer, the identity of the customer, and the purchased item can be "data mined" using known algorithms to determine relationships, such as the spatial relationship between product placement and the choice of products purchased by the customers.

Claim 39 is reproduced below.

> 39. A method for determining relationships of data associated with product placement in a retail space, the method comprising the steps of:
>
> generating data relationships using data mining techniques, wherein the data relationships associate individual customers with information related to the individual customers;
>
> generating spacial relationships using data mining techniques, wherein the spatial relationships include relative placement of products within the retail space;
>
> integrating the data relationships with the spatial relationships to determine additional information concerning purchases by the customers;

wherein the spatial relationships further include associations of customer paths through the retail space with product placement within the retail space.

THE REFERENCES

The examiner relies on the following references:

Hughes et al. (Hughes) 5,920,261 July 6, 1999

Toung, Creating A More Productive Retail Machine, Wal-Mart Stores, Inc. - Company Report, December 1997.

THE DATA GAME: Sophisticated marketing wizards can track just about everything a consumer does (corporate data-mining), Maclean's, v. 111, n. 16, p. 14 (August 1998) (hereinafter the "Data Game").

THE REJECTION

Claims 39, 41-44, 53, and 55-58 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hughes, Toung, and the Data Game.

We refer to the final rejection (pages referred to as "FR__") and the examiner's answer (pages referred to as "EA__") for a statement of the examiner's rejection, and to the brief (pages referred to as "Br__") for a statement of appellants' arguments thereagainst. Familiarity with the rejection and the arguments is presumed in the discussion below.

DISCUSSION

New ground of rejection under 37 CFR § 41.50(b)

Claims 39, 41-44, 53, and 55-58 are rejected under 35 U.S.C. § 112, first paragraph, based on lack of written description, and under § 112, second paragraph, as indefinite. Claim 53 is the apparatus counterpart of method claim 39, where "means for" has been placed before each of the steps in claim 39. Claim 39 is analyzed as representative.

Claim 39 recites "generating spacial relationships using data mining techniques, wherein the spatial relationships include [1] relative placement of products within the retail space; ... [and] [2] associations of customer paths through the retail space with product placement within the retail space" (numbers in brackets added). It does not appear that the "relative placement of products within the retail space" is done by data mining and, accordingly, there is no written description support and the limitation is also misdescriptive. It is disclosed that spatial analysis using data collected by position identifying devices such as GPS units is used to determine customer paths and item location within the retail space (e.g., spec. at 4-5 and 29, lines 19-24), which implies that spatial relationships of "relative placement of products within the retail space" are generated using GPS equipment, not by "data mining." Appellants

describe integrating spatial analysis and data mining analysis (e.g., spec. at 26, lines 11-14), which again implies that spatial relationships generated by "spatial analysis" and not by "data mining." It is disclosed that "[t]hese spatial relationships may be integrated with the data relationships discovered through data mining to determine additional information concerning purchases by customers" (spec. at 30, lines 3-6), which again implies that spatial relationships are generated by "spatial analysis," not "data mining." Claim 39 requires that the two spatial relationships being claimed, in particular, the "relative placement of products within the retail space," have to be generated using data mining techniques. In summary, it appears that "generating spacial relationships using data mining techniques, wherein the spatial relationships include relative placement of products within the retail space" lacks written description support and is misdescriptive because relative placement of products is not accomplished by data mining, but by measurement with a position identifying system.

Claim 39 further recites "wherein the spatial relationships further include associations of customer paths through the retail space with product placement within the retail space," which modifies the limitation of "generating spatial relationships using data mining techniques." The specification indicates that customer paths are stored along with purchase information (spec.

at 34, lines 11-17) and with the position of products within the retail space (spec. at 36, line 11, to 37, line 4), which indicates that "associations of customer paths through the retail space with product placement within the retail space" can be done by data mining.

Obviousness

Claim 53 is the apparatus counterpart of method claim 39, where "means for" has been placed before each of the steps in claim 39. Claim 39 is analyzed as representative.

(1) Generating data relationships

The examiner does not explicitly identify the differences between Hughes and the subject matter of claim 39. The examiner first finds that "Toung teaches generating customer data by associating customers with information related to each customer using data mining and associating the information with spatial relationships" (FR2) and concludes that it would have been obvious to use the data mining of Toung in the system of Hughes "since the data mining of Toung would have provided the ability to sort patterns by customer information" (FR2-3). In the answer, the examiner also notes that the Data Game discloses profiling based on individual customers (EA6-7) and concludes that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to add Toung and The

Data Game's group and individual customer data mining information to Hughes['s] information on customer path, product placement, and product path ... in order to better place and offer products in relation to customer actions" (FR7).

It is evident that the claim limitation at issue is "generating data relationships using data mining techniques, wherein the data relationships associate individual customers with information related to the individual customers." The specification discloses that the association could be by means of a customer card and the information related to the individual customers could be personal information, such as age, address, occupation, etc., where "the retail establishment receives the ability to aggregate information concerning the customer's buying habits" (page 27). Hughes is directed to analyzing spatial relationships in the placement of items in the store and does not discuss data mining based on the individual customers. Thus, this limitation is a difference over Hughes.

Appellants argue that "*Toung* quite clearly describes collecting information about multiple customers and then using that information to target particular demographics" (Br4) and "*Toung* does not teach generating data relationships that associate individual customers with information related to that individual" (Br4).

Toung discloses:

> With millions of customer transactions passing through its stores, Wal-Mart has built one of the largest data bases in the country. Through data mining techniques, managers are extracting information about customer buying patterns that allow them to refine merchandise placements. For example, managers discovered that shoppers were more likely to buy travel alarm clocks if they were placed in the luggage department than in the jewelry department. Furthermore, by being able to sort these patterns by age, income and place of residence, the company can more precisely target each store for the specific demographics of the nearby population. Information derived from Wal-Mart's co-branded credit card can also be used to develop individualized customer profiles.

The examiner relies on the last two sentences for a teaching of data mining by group and by individual.

The quotation above teaches using data mining to generate data relationships "wherein the data relationships associate individual customers with information related to the individual customers." The teaching of "being able to sort these patterns by age, income and place of residence" using data mining techniques indicates the use of information related to individual customers, i.e., "age, income and place of residence." In addition, using information from the Wal-Mart credit card "to develop individualized customer profiles" by data mining techniques indicates the use of information related to individual customers just as appellants' disclosure at page 27, lines 1-16, of the specification that it was known in the art to data mine based on the individual customer information obtained from use of a preferred customer card. Toung also discloses data mining the

combination of spatial relationships (placement of products in the store) and data relationships (association of product buying patterns with individual customer information, such as age, income, and place of residence, and customer profile). Further, the Data Game teaches that a goal of data mining is to create dossiers on individuals to better target those individuals (page 2), which additionally teaches using data mining to generate data relationships associating individual customers with information related to the individual customers. We agree with the examiner that one of ordinary skill in the data mining art would have been motivated to add generating data relationships using data mining techniques which associate individual customers with information related to the customers, as taught by Toung, the Data Game, and the admitted prior art, to the spatial relationship data mining techniques taught by Hughes because data mining seeks to discover as many possible relationships as possible between varied data and generating data relationships between purchases and individual information was a well known data mining strategy.

(2) Generating spatial relationships

Claim 39 recites "generating spacial relationships using data mining techniques, wherein the spatial relationships include relative placement of products within the retail space; ... [and] wherein the spatial relationships further include associations of

customer paths through the retail space with product placement within the retail space." The "relative placement of products within the retail space" is the location of the products within the store and, as noted in the new ground of rejection, we find that determining the relative placement of products using data mining techniques lacks written description support and is misdescriptive of the described invention.

The examiner finds (FR2):

> Hughes et al. teach[] associating spatial relationships with customer data to determine additional information concerning purchases by the customer ..., recording (identifying) paths of customers ..., associating the locations of products with the paths of customers as claimed ... which employs data mining algorithms to generate input data for forming the set of spatial relationships (see at least col. 17, lines 5-20, 30-45, col. 20, lines 10-15, 25-60) and spatial analysis algorithms to form the set of spatial relationships (see at least col. 20, lines 40-50, col. 19, lines 1-35, col. 13, lines 25-45, col. 18, lines 15-40).

Appellants argue that the data mining of Hughes is not described as generating spatial relationships, but is only described as used for measuring overall facility performance. For example, appellants argue (Br5):

> The data mining of *Hughes* is not described or applied to generating spatial relationships using data mining techniques where the spatial relationships include associations of customer paths through retail space with product placement. In order to apply the teachings of data mining from *Tough* [sic, *Toung*] to *Hughes*, *Hughes* must be modified by applying the use of data mining to generating spatial relationships using data mining techniques where the spatial relationships include associations of customer paths through the retail space with product placement. No such teaching is found in either reference.

And, appellants further argue (Br6):

> In addition, *Hughes* teaches using data mining for measuring overall facility performance. *Hughes* does not teach using data mining to generate spatial relationships where the spatial relationships include relative placement of products and also include associations of customer paths through the space with product placement.
>
> . . .
>
> The data mining described by *Hughes* is used for measuring and analyzing overall facility performance. It is also used for determining which departments "are performing well and which are not with respect to a variety of performance measures. These measures could include total profit, profit per area, and so on." Column 17, lines 5-13. *Hughes* does not teach, however, generating spatial relationships using data mining techniques where the spatial relationships include relative placement of products within the retail space and associations of customer paths through the retail space with product placement within the retail space. The performance measures are not spatial relationships.

We do not find where the examiner addresses these arguments that Hughes does not disclose using data mining to generate spatial relationships. The examiner refers to and quotes from Hughes (EA9-10), but does not address generating spatial relationships using data mining. Hughes mentions "mining" twice, stating that "[t]he Analyst tool offers users a variety of advanced data visualization, decision making, and mining tools for measuring and analyzing overall facility performance" (col. 17, lines 6-8) and "[t]he Analyst tool also offers users a variety of advanced data visualization, decision making, and mining tools for measuring and analyzing micro-level data, for example SKU (stock keeping units), colors, patterns, and styles

and for analyzing overall enterprise performance" (col. 17, lines 13-17), where "mining" is interpreted to mean "data mining." Hughes does not expressly describe using data mining to generate spatial relationships and the examiner has not explained why he considers the generating spatial relationships by data mining limitations to be met. Nevertheless, we find that Hughes does employ data mining to determine spatial relationships to the extent disclosed and claimed.

Hughes discloses determining relative placement of products within the retail space, e.g., by using the Intelligent Location System and 3DPOS system to determine the positioning coordinates of the fixtures which store the products (col. 17, line 66, to col. 18, line 14; Fig. 32 showing placement of fixtures and Fig. 33 showing which products are in which fixtures). This is the same method as used by appellants (spec. at 32, lines 5-16). Claim 39's recitation that "generating spacial relationships using data mining techniques, wherein the spatial relationships include relative placement of products within the retail space" is considered to lack written description and to be misdescriptive because determining relative placement of products is not disclosed to be done using data mining. This is part of the confusion in the rejection. Nevertheless, in case we are wrong about our claim interpretation, we consider the limitation of "generating spacial relationships using data mining

techniques, wherein the spatial relationships include relative placement of products within the retail space" to be met because Hughes uses the same technique disclosed by appellants.

Hughes discloses "associations of customer paths through the retail space with product placement within the retail space" using data mining techniques, although the term "data mining" is not specifically mentioned. In Hughes, the store has a record of the items purchased, the time that the items were taken off their respective fixtures, and the product placement, and from this can calculate the path (Fig. 32; col. 18, lines 16-40), which is considered "associations of customer paths through the retail space with product placement within the retail space" which is done by data mining since it must mine the data regarding location of the items, time the items were moved, and the order in which items were removed which determines a customer path. Hughes also discusses tracking the path taken by the item and the customer (col. 18, lines 24-40), which is also considered "associations of customer paths through the retail space with product placement within the retail space" which is done by data mining since it involves examining the data regarding the product placement and the customer path.

(3) Integrating data relationships with spatial relationships

As discussed in section (1), we conclude that one of ordinary skill in the data mining art would have been motivated to integrate data relationships which associate individual customers with information related to the customers, as taught by Toung, the Data Game, and the admitted prior art, with the spatial relationships generated using data mining techniques taught by Hughes because data mining seeks to discover as many possible relationships as possible between varied data. In addition, Toung discloses data mining the combination of spatial relationships (placement of products in the store) and data relationships (association of product buying patterns with individual customer information, such as age, income, place of residence, and customer profile).

For the reasons stated above, the rejection of claims 39, 41-44, 53, and 55-58 is affirmed.

CONCLUSION

The rejection of claims 39, 41-44, 53, and 55-58 is affirmed.

New grounds of rejection of claims 39, 41-44, 53, and 55-58 under 35 U.S.C. § 112, first and second paragraphs, are entered pursuant to 37 CFR § 41.50(b).

This decision contains new grounds of rejection pursuant to 37 CFR § 41.50(b) (2004). 37 CFR § 41.50(b) provides "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review."

37 CFR § 41.50(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

> (1) Reopen prosecution. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .
>
> (2) Request rehearing. Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1). See 37 CFR § 1.136(a)(1)(iv) (2004).

AFFIRMED - 37 CFR § 41.50(b)

ERROL A. KRASS
Administrative Patent Judge

LEE E. BARRETT
Administrative Patent Judge

MAHSHID D. SAADAT
Administrative Patent Judge

BOARD OF PATENT APPEALS AND INTERFERENCES

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